

REMARKS

Election/Restrictions

The Examiner has concluded that the previously pending claims in this application are drawn to two distinct inventions, with claims 1-14 and 30-39 being drawn to a first invention ("Invention I") and claims 15-29 being drawn to a second invention ("Invention II"). During a telephone conversation with the Examiner, the undersigned attorney for the Applicant provisionally elected to prosecute the claims directed to Invention I. Applicant hereby affirms this election to prosecute the claims directed to Invention I, specifically claims 1-14 and 30-39. Accordingly, Applicant withdraws claims 15-29 from further consideration.

Claim Rejections – 35 U.S.C. 103

The Examiner has rejected claims 1-14 and 30-39 under 35 U.S.C. 103(a) as being unpatentable over combinations of the following U.S. patents: (1) U.S. Patent No. 7,124,131, with inventors of Guthridge et al. (hereinafter "Guthridge"); (2) U.S. Patent No. 7,107,267, with an inventor of Taylor (hereinafter "Taylor"); (3) U.S. Patent No. 5,692,178, with an inventor of Shaughnessy (hereinafter "Shaughnessy"); and (4) U.S. Patent No. 6,658,417, with inventors of Stakutis et al. (hereinafter "Stakutis").

The Examiner cited Guthridge in connection with most of the limitations in the independent claims. Guthridge relates to locks for a distributed file system. However, Applicant submits that Guthridge is substantially different from the invention described and claimed in this patent application. Most notably, Guthridge discloses locks being requested by client nodes and granted by a server node (Col. 3, lines 9-10). In contrast, the invention described in this patent application does not involve such a client-server relationship. The claims have been amended herein to more clearly distinguish over Guthridge, and the other references of record.

Claim 1, as amended herein, includes a limitation to "the first computing entity attempting to obtain a lease for itself." In contrast, Guthridge discloses a process of a client acquiring a lock from a server node (Col. 4, lines 13-15). Instead of the client

obtaining a lease for itself, the client in Guthridge requests a lock from the server node managing the file system (Col. 4, lines 11-13).

Claim 1, as amended herein, is further limited to several steps that are performed by the first computing entity in attempting to obtain a lease for itself. For example, claim 1 is limited to the first computing entity "reading the owner field," "writing to the owner field to indicate the assumption of a lease," "writing to the time field to indicate when the lease expires," "reading the time field," "writing to the owner field to break the existing lease and to indicate an assumption of a new lease," and "writing to the time field to indicate when the new lease expires." Again, in contrast, a client node (i.e. a computing entity attempting to obtain a lock for itself) simply requests a lock from a server node, and then the server node performs numerous steps (see Figures 3A, 3B and 3C) to determine whether the lock is to be granted to the client (see e.g. step 126 of Figure 3C) or whether the lock is to be denied (see e.g. step 74 of Figure 3A).

Applicant submits that a server node of Guthridge does not attempt to obtain a lease for itself. Thus, seemingly only a client node of Guthridge can be considered as a possible "first computing entity" of claim 1. However, client nodes of Guthridge do not perform the above steps of claim 1 in attempting to obtain a lock for itself. Prior to this amendment, the pending claims were not so clearly limited to the first computing entity performing the above steps. Hence, the Examiner cited steps that are performed by the server nodes in Guthridge as disclosing some of the above steps of claim 1, which are now clearly performed by the first computing entity. The Examiner also cited Taylor as disclosing some of the above steps of claim 1. First, Applicant does not agree that the citations made by the Examiner disclose or suggest the above steps of claim 1.

Applicant submits that the steps of claim 1 are substantially different from the steps cited by the Examiner. For example, the Examiner cites returning a file system epoch number of a lock as writing to the time field to indicate when the lease expires.

Applicant submits that there is no indication in Guthridge that the epoch number indicates when a lease expires. Instead, Guthridge indicates that "a server node instance is identified by a persistently stored epoch number, wherein the epoch number is incremented each time the server node begins managing the storage containing the data to be locked, such as when the server node is restarted" (Col. 3, lines 12-16).

Applicant further submits that the steps of claim 1 are not obvious in view of the steps cited by the Examiner.

More clearly, however, Applicant submits that the steps of Guthridge cited by the Examiner are performed by the server node in Guthridge, and not by a client node. As stated above, Applicant submits that the server node in Guthridge does not attempt to obtain a lease for itself. At the same time, Applicant submits that the client node in Guthridge merely requests a lock from the server node, and that the server node performs all the steps cited by the Examiner, and so the client node does not perform the above steps of claim 1. Thus, Applicant submits that Guthridge does not disclose nor suggest a single computing entity that attempts to obtain a lease for itself and performs the above steps of claim 1. Claim 1 is also limited to "the first computing entity accessing the first data entity while the lease is in effect." Again, Applicant submits that there is no indication in Guthridge that the server node accesses a data entity for which a lease is obtained. At the same time, while a client node in Guthridge may access a data entity for which a lock is acquired, Applicant submits that the client node does not perform the above steps of claim 1. So there is no single entity in Guthridge that attempts to obtain a lease for itself, accesses a data entity for which a lease is acquired and performs the above steps of claim 1.

Applicant submits that none of the other references cited by the Examiner disclose nor suggest a single computing entity attempting to obtain a lease for itself, accessing a data entity for which a lease is acquired and performing the above steps of claim 1. Accordingly, Applicant submits that claim 1 is patentable over the references cited by the Examiner.

Claims 2-14 depend from claim 1 and are, therefore, patentable over the references cited by the Examiner for the same reasons as described above with reference to claim 1. In addition, Applicant submits that some of these dependent claims are patentable for additional reasons, based on limitations contained in the dependent claims themselves. For example, claim 9 is limited to "the first computing entity determines whether a prior lease has expired by reading a first value from the time field, delaying for a predetermined lease period and reading a second value from the time field, wherein the first computing entity determines that the prior lease has

expired if the second value is the same as the first value, and the first computing entity determines that the prior lease has not expired if the second value is different from the first value." The Examiner cited the use of file system epoch numbers in Guthridge against the limitations of claim 9. However, in Guthridge, the client node does not determine whether a prior lease has expired based on reading the epoch number. The server node determines whether a reassertion grace period has expired (Col. 4, lines 15-20). As described above, the client node simply requests a lock and the server node determines whether the request should be granted or denied. As described above, Applicant submits that the server node of Guthridge cannot be considered as a possible first computing entity of claims 1 and 9, and Applicant submits that the client node does not perform the steps of claim 9.

Applicant submits that claim 30, as amended herein, is patentable over the references cited by the Examiner for reasons that are similar to those described above in connection with claim 1. Applicant submits that none of the references cited by the Examiner disclose nor suggest a single computing entity "reading the owner field and determining whether the first data entity is in use by a computing entity," "writing to the owner field to take control of a lock on the first data entity," "accessing the first data entity," and "writing an entry to a queue owner field to indicate an interest in accessing the first data entity and waiting for an opportunity to access the first data entity." Again, the Examiner cites several steps of Guthridge against these limitations of claim 30. However, except for the client accessing data associated with a lock, the other steps of Guthridge cited by the Examiner are performed by the server nodes to determine whether or not to grant a request from a client node for a lock. Applicant submits that a server node of Guthridge cannot be considered as a possible first computing entity of claim 30 because the server nodes do not access the data associated with a lock. At the same time, while the client nodes of Guthridge access the data associated with a lock, they do not read the owner field and determine whether the first data entity is in use by a computing entity, they do not write to the owner field to take control of a lock, and they do not write an entry to a queue owner field to indicate an interest in accessing the first data entity and wait for an opportunity to access the first data entity.

Accordingly, Applicant submits that claim 30 is patentable over Guthridge and the other

references cited by the Examiner.

Claims 31-39 depend from claim 30 and are, therefore, patentable over the references cited by the Examiner for the same reasons as described above with reference to claim 30. In addition, Applicant submits that some of these dependent claims are patentable for additional reasons, based on limitations contained in the dependent claims themselves. For example, claim 31 is limited to "the first computing entity reading a time field to determine whether a lease on the data entity has expired and, if the lease has expired, the first computing entity writing to the owner field to break the existing lease and to indicate an assumption of a new lease of the first data entity." The Examiner again cited steps of Guthridge against the limitations of claim 31. However, in Guthridge, the client node does not perform the steps cited by the Examiner. These steps are performed by the server nodes, instead. As described above, the client node simply requests a lock and the server node determines whether the request should be granted or denied. Also as described above, Applicant submits that the server node of Guthridge cannot be considered as a possible first computing entity of claims 30 and 31, and the client node does not perform the steps of claim 31.

Conclusion

The various embodiments of the applicant's invention as defined in the various independent claims recite features that are not found at all in any of the cited references, whether the references are viewed independently or in combination. Accordingly, applicant submits that the independent claims are allowable over the cited prior art. The various dependent claims, of course, simply add additional limitations and should therefore be allowable along with their respective independent base claims.

Applicant requests reconsideration of this application.

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